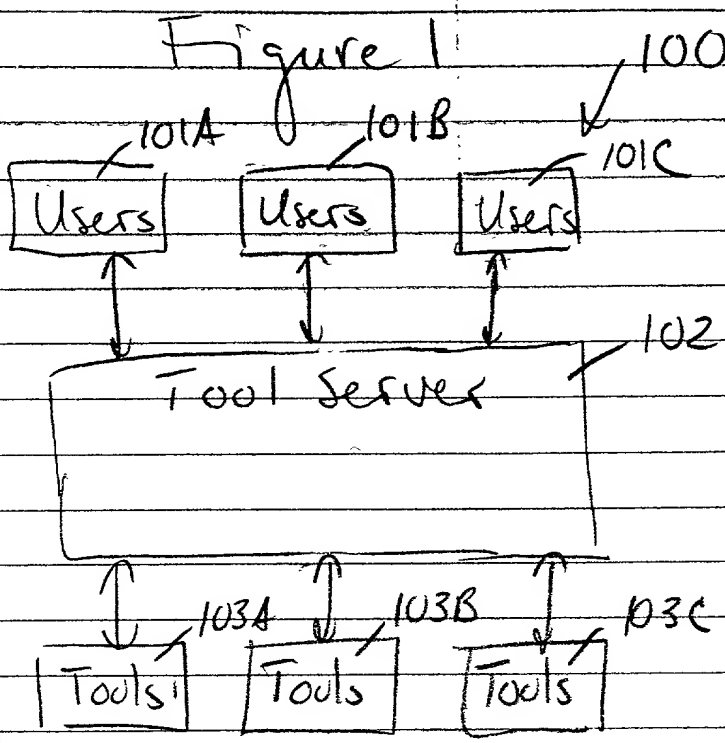
Figure 1


100
101A
101B
101C
Users
Users
Users
102
Tool Server
103A
103B
103C
Tools
Tools
Tools

21183-P00101

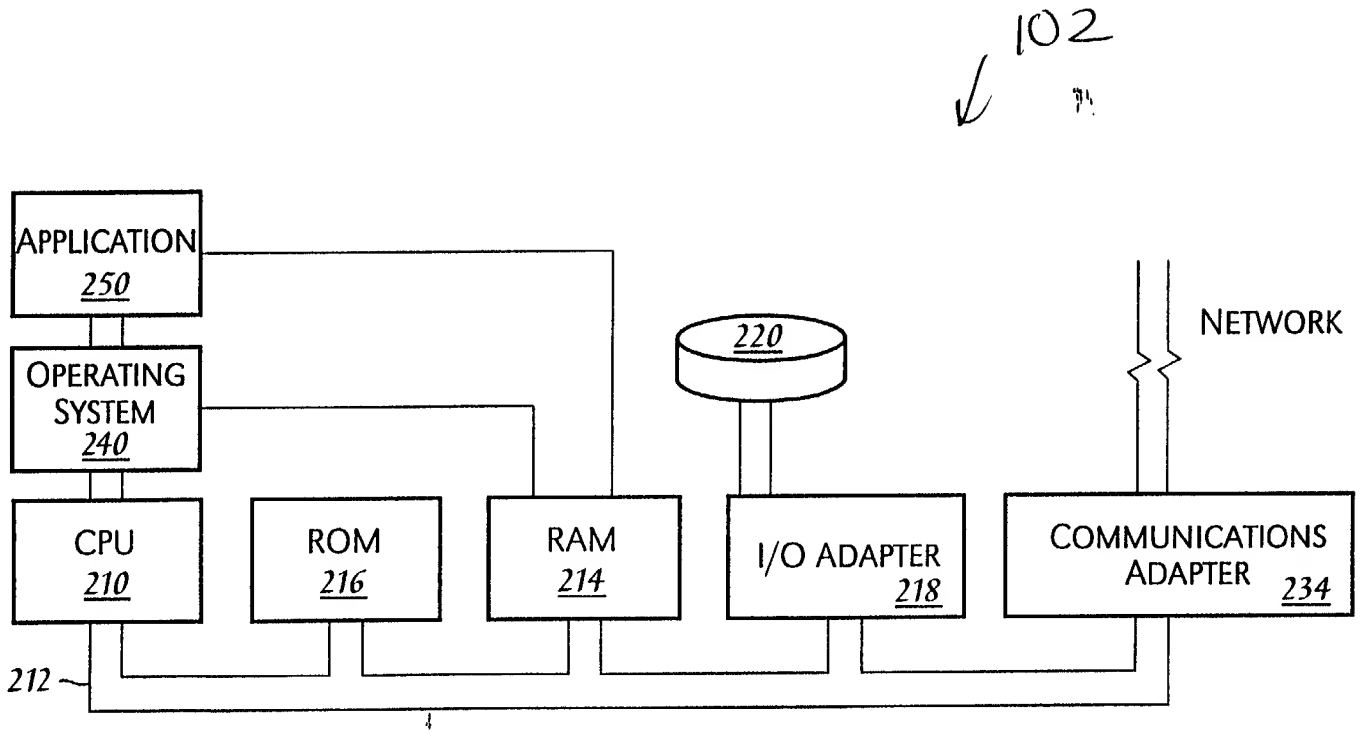


Fig. 2

Figure 3

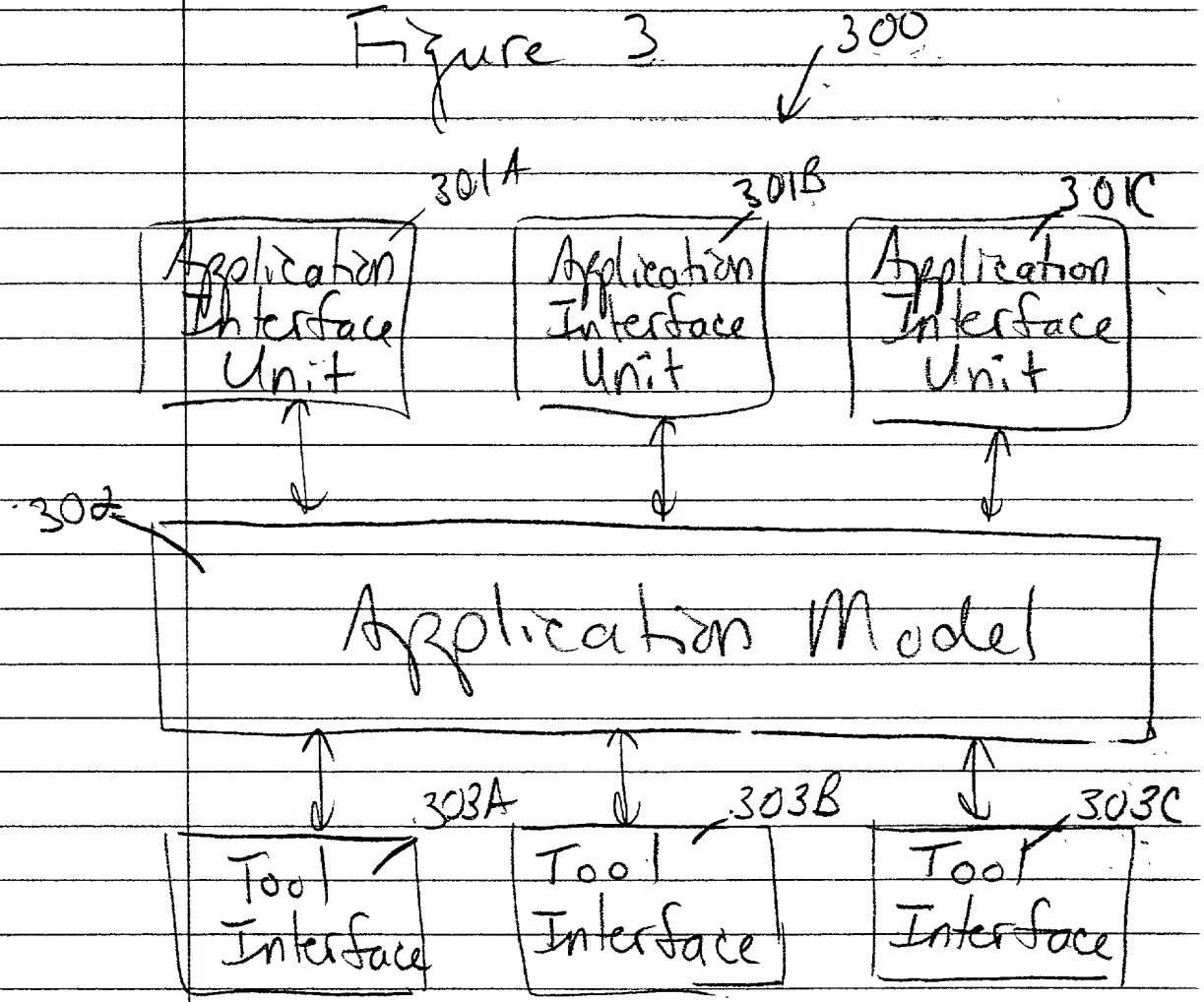
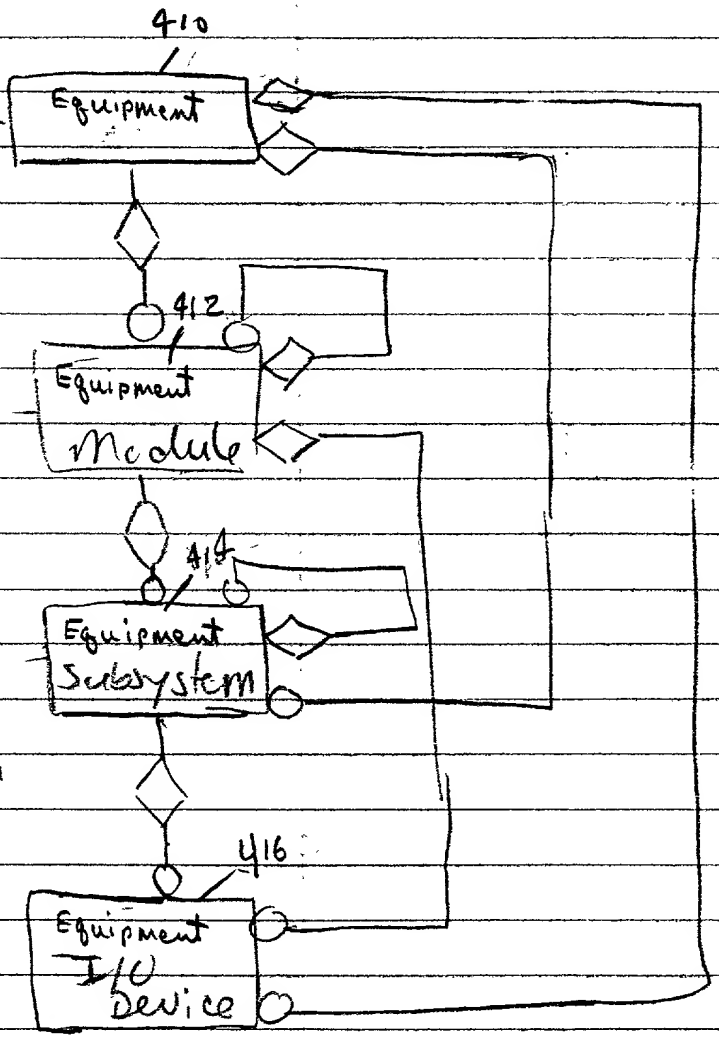

300
301A
301B
301C
Application Interface Unit
Application Interface Unit
Application Interface Unit
302
Application Model
303A
303B
303C
Tool Interface
Tool Interface
Tool Interface

Figure 4 400


410
Equipment
412
Equipment
Module
414
Equipment
Subsystem
416
Equipment
I/O
Device

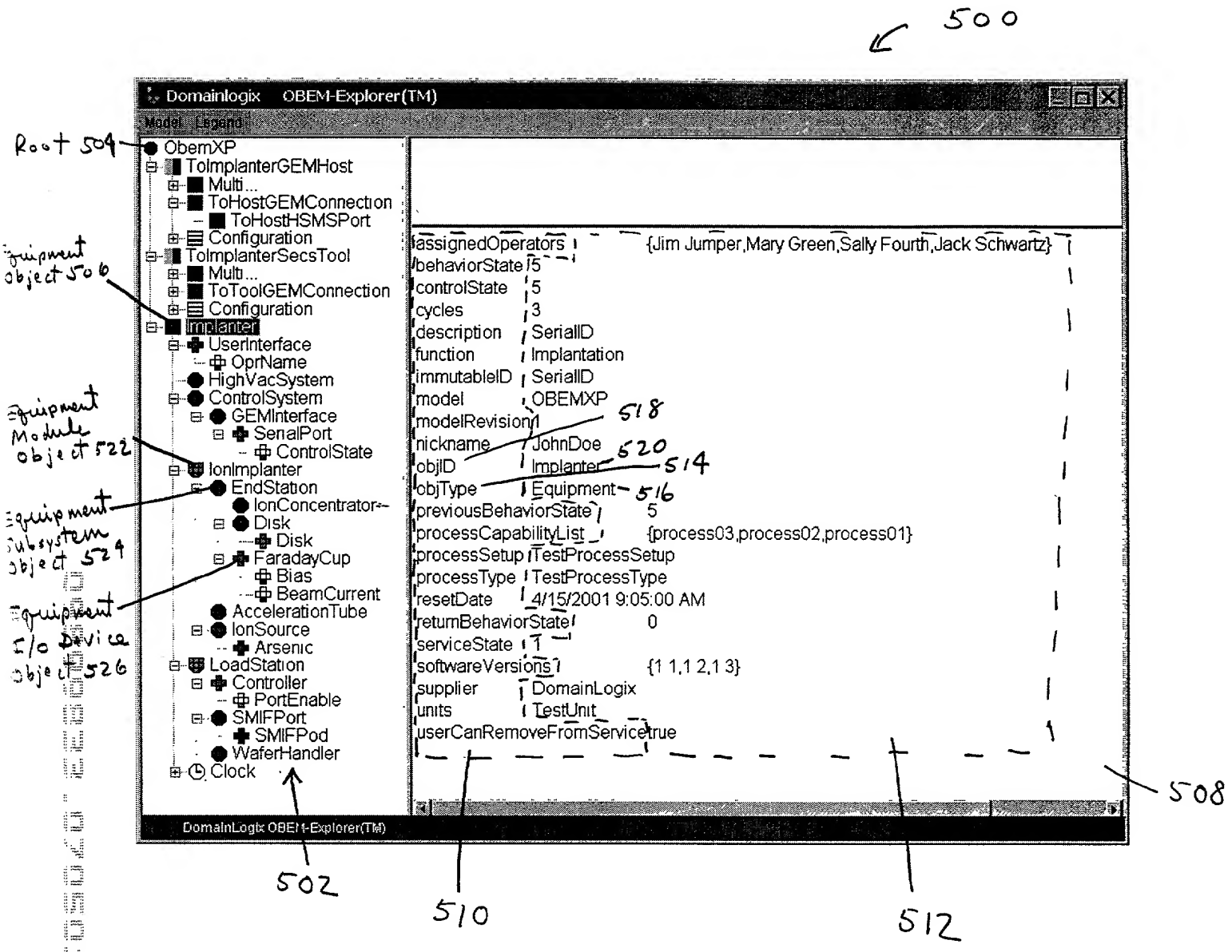

500
Domainlogix OBEM-Explorer(TM)
Model Legend
Root 509
ObemXP
ToImplanterGEMHost
Multi...
ToHostGEMConnection
ToHostHSMSPort
Configuration
ToImplanterSecsTool
Multi...
ToToolGEMConnection
Configuration
Implanter
UserInterface
OprName
HighVacSystem
ControlSystem
GEMInterface
SerialPort
ControlState
IonImplanter
EndStation
IonConcentrator
Disk
Disk
FaradayCup
Bias
BeamCurrent
AccelerationTube
IonSource
Arsenic
LoadStation
Controller
PortEnable
SMIFPort
SMIFPod
WaferHandler
Clock
Equipment object 506
Equipment Module object 522
Equipment Subsystem object 524
Equipment I/O Device object 526
assignedOperators {Jim Jumper,Mary Green,Sally Fourth,Jack Schwartz}
behaviorState 5
controlState 5
cycles 3
description SerialID
function Implantation
immutableID SerialID
model OBEMXP
modelRevision 1
nickname JohnDoe
objID Implanter
objType Equipment
previousBehaviorState 5
processCapabilityList {process03,process02,process01}
processSetup TestProcessSetup
processType TestProcessType
resetDate 4/15/2001 9:05:00 AM
returnBehaviorState 0
serviceState 1
softwareVersions {1 1,1 2,1 3}
supplier DomainLogix
units TestUnit
userCanRemoveFromService true
518
520
514
516
508
502
510
512

FIG. 5

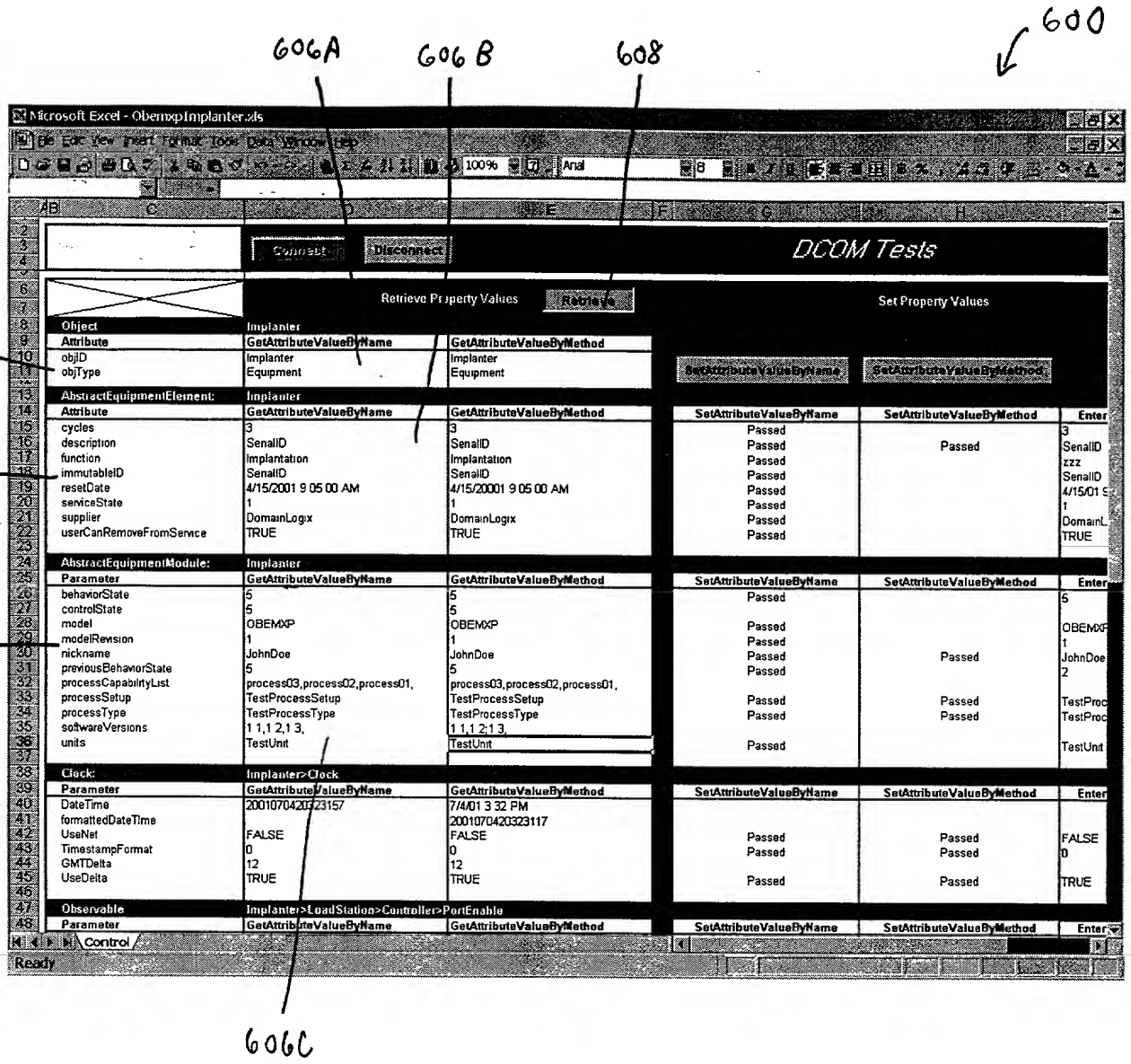

600
606A
606B
608
602A
602B
602C
606C
Microsoft Excel - ObemxpImplanter.xls
Connect
Disconnect
DCOM Tests
Retrieve Property Values
Refresh
Set Property Values
Object
Implanter
Attribute
GetAttributeValueByName
GetAttributeValueByMethod
SetAttributeValueByName
SetAttributeValueByMethod
objID
Implanter
Implanter
objType
Equipment
Equipment
AbstractEquipmentElement:
Implanter
cycles
description
function
immutableID
resetDate
serviceState
supplier
userCanRemoveFromService
AbstractEquipmentModule:
Parameter
behaviorState
controlState
model
modelRevision
nickname
previousBehaviorState
processCapabilityList
processSetup
processType
softwareVersions
units
Clock:
Implanter>Clock
DateTime
formattedDateTime
UseNet
TimestampFormat
GMTDelta
UseDelta
Observable
Implanter>LoadStation>Controller>PortEnable
Control
Ready

FIG. 6

700

FIG. 7

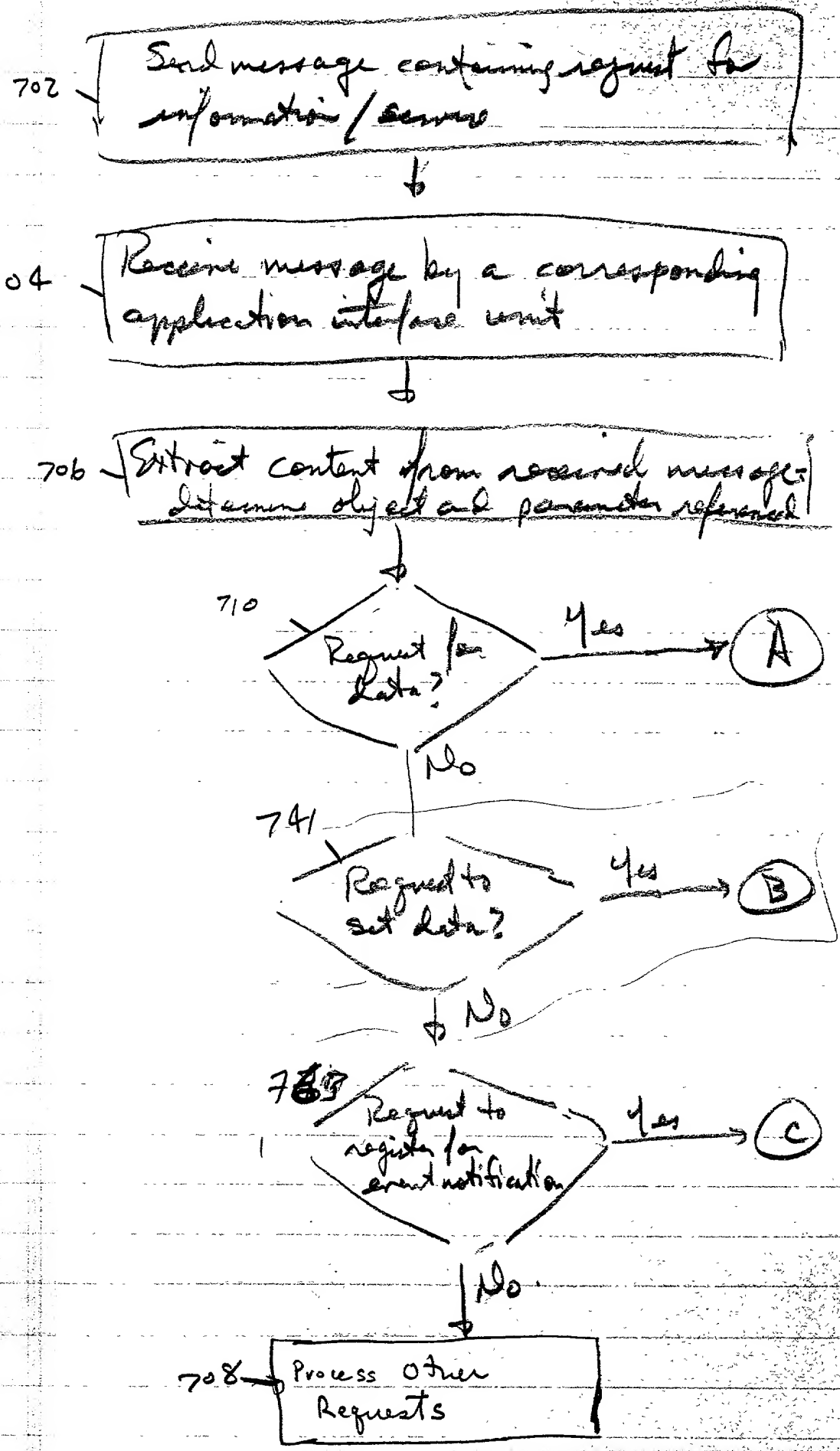

Send message containing request for information / service
702
Receive message by a corresponding application interface unit
704
Extract content from received message; determine object and parameter referenced
706
710
Request for Data?
Yes
A
No
741
Request to set data?
Yes
B
No
Request to register for event notification
Yes
C
No
708
Process Other Requests

FIG. 7, cont.

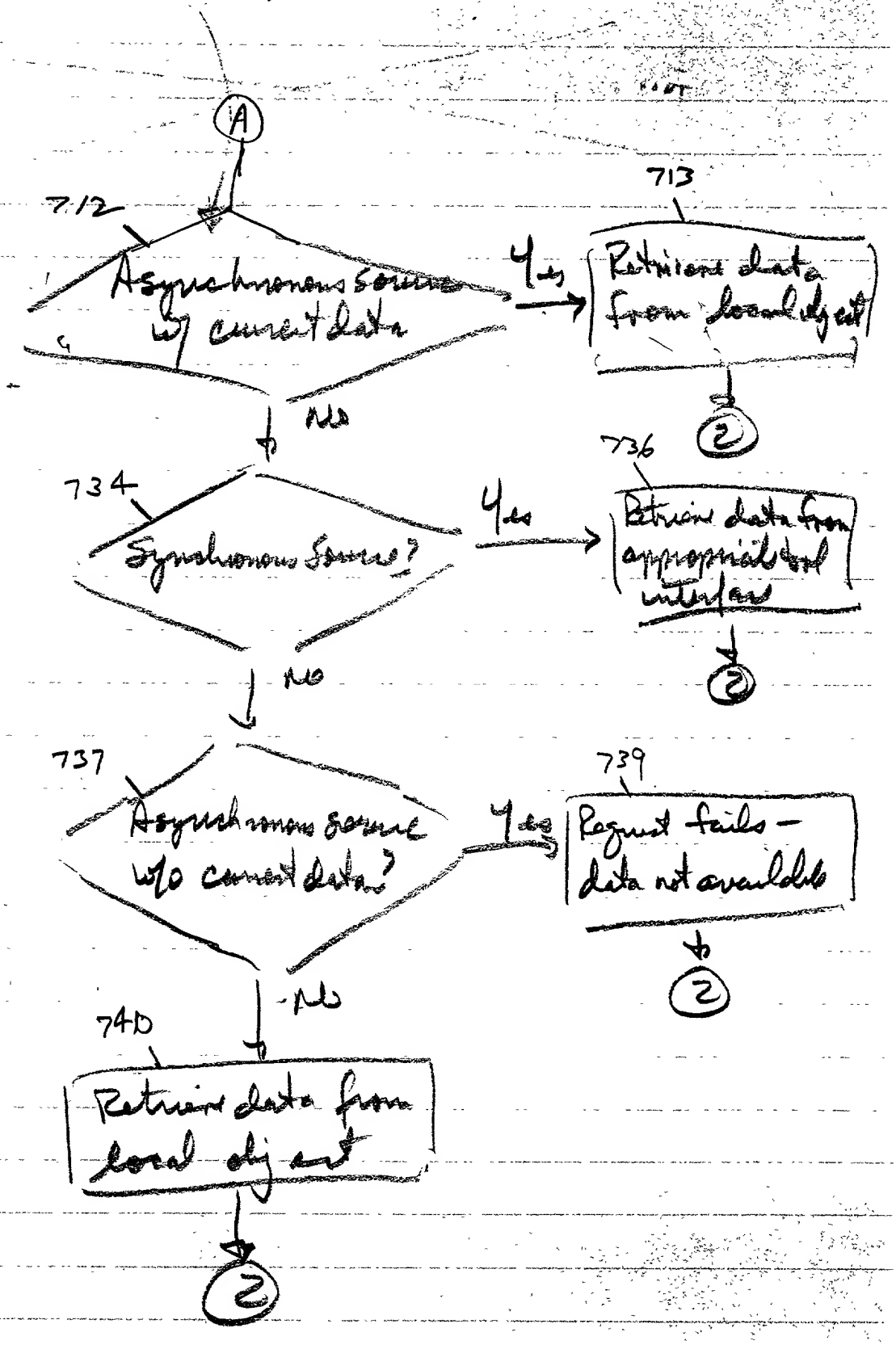


FIG 7, cont.

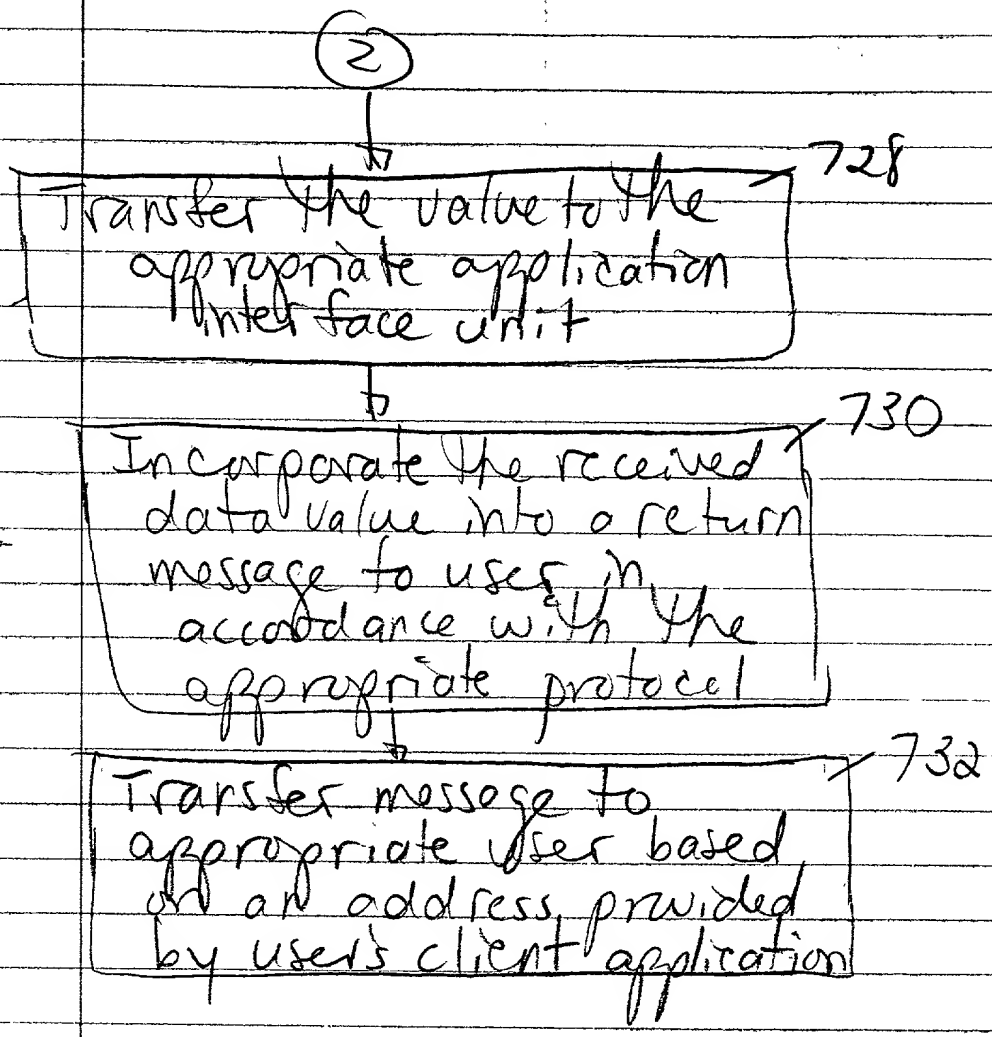

2
Transfer the value to the appropriate application interface unit
728
Incorporate the received data value into a return message to user in accordance with the appropriate protocol
730
Transfer message to appropriate user based on an address provided by user's client application
732

FIG. 7, cont.

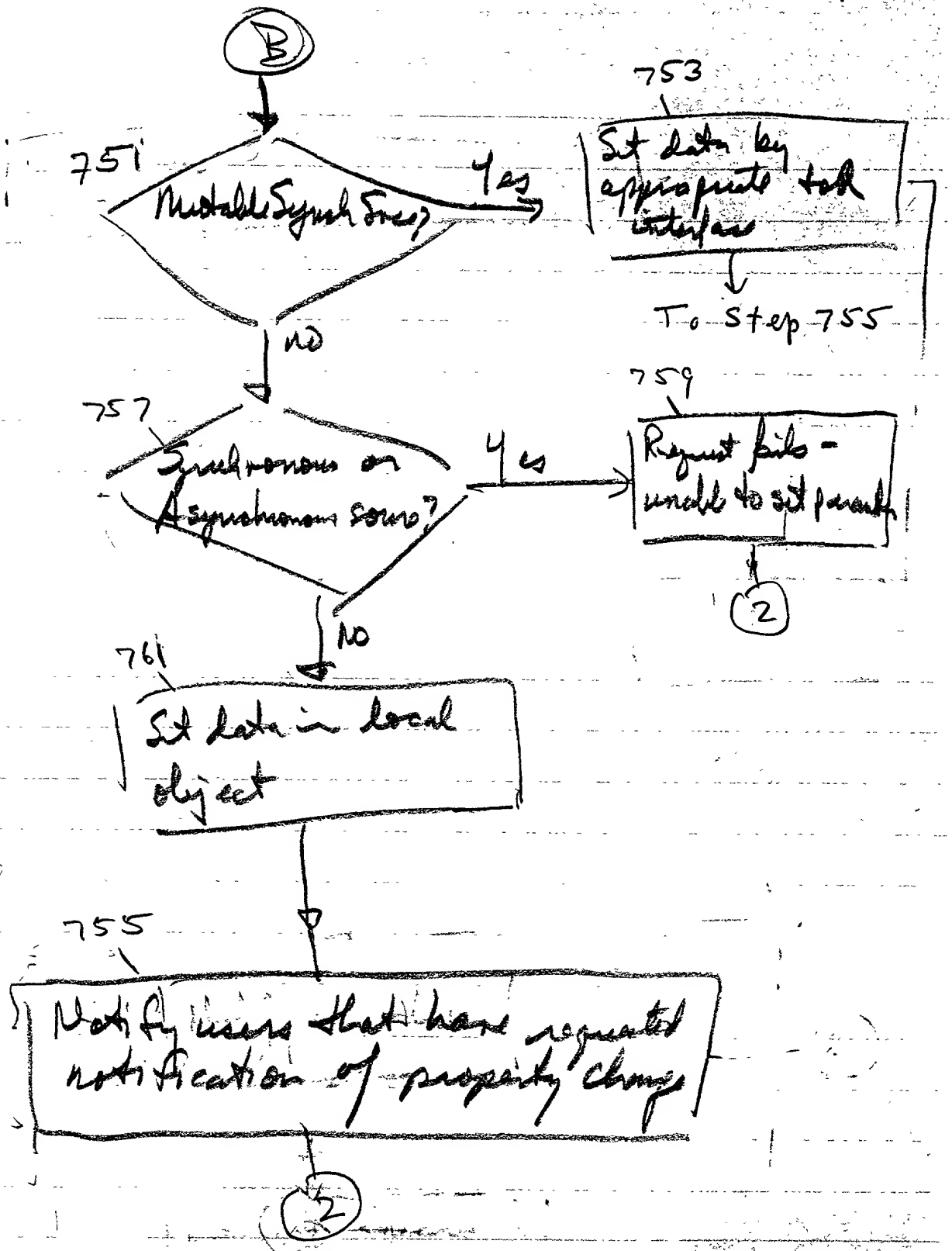

B
751
Modifiable Synch Prop?
Yes
753
Set data by appropriate tool interface
To Step 755
NO
757
Synchronous or Asynchronous Conn?
Yes
759
Request fails - unable to set param
2
NO
761
Set data in local object
755
Notify users that have requested notification of property change
2

FIG. 7, cont.

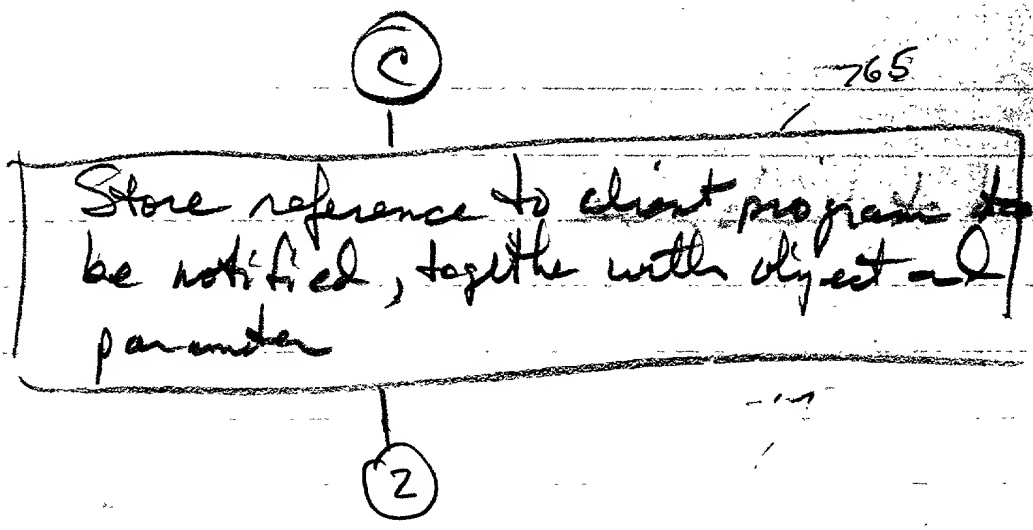

C
765
Store reference to client program to be notified, together with digest and parameter
2

FIG. 7, cont.

FIG. 8

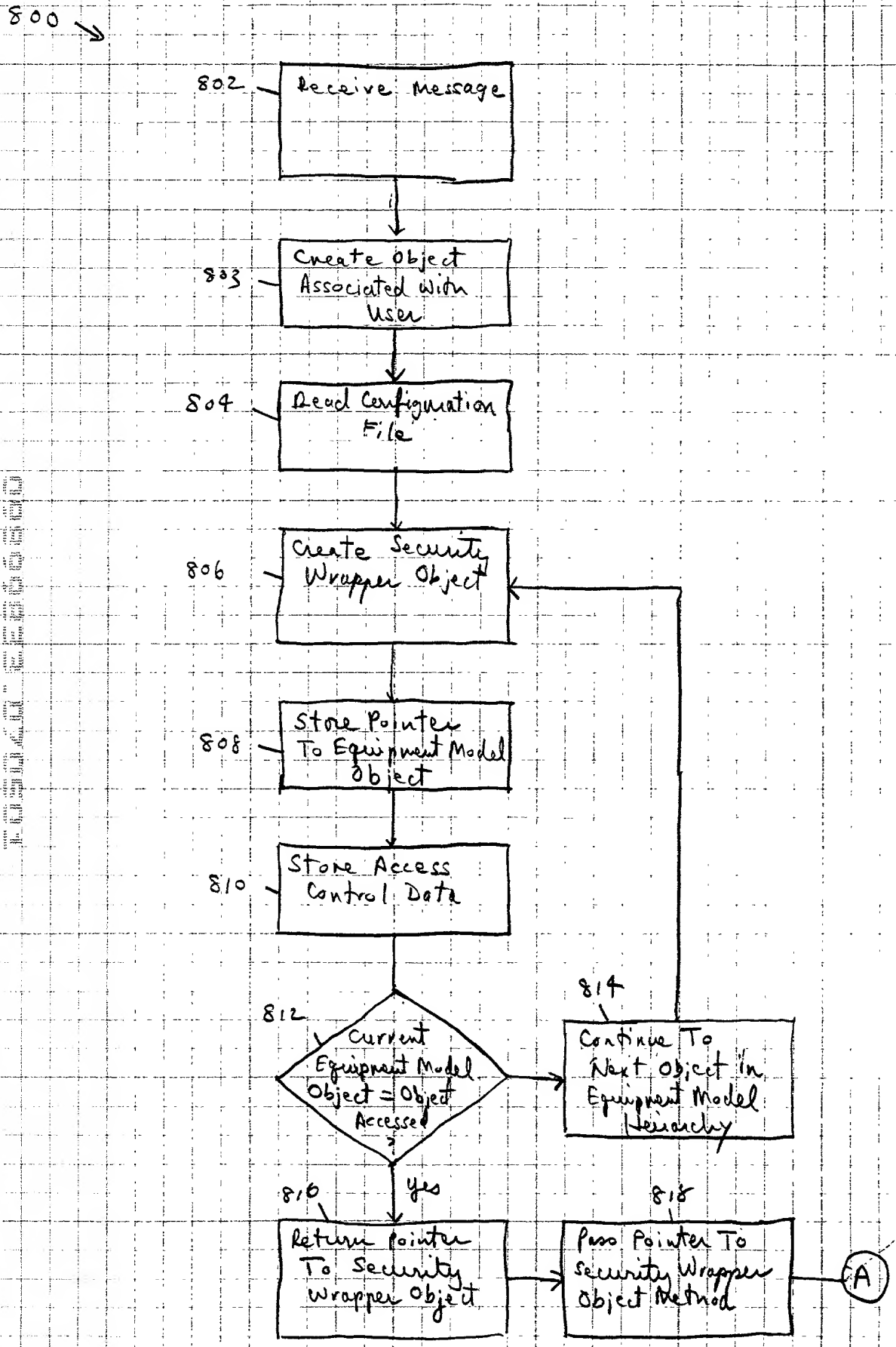
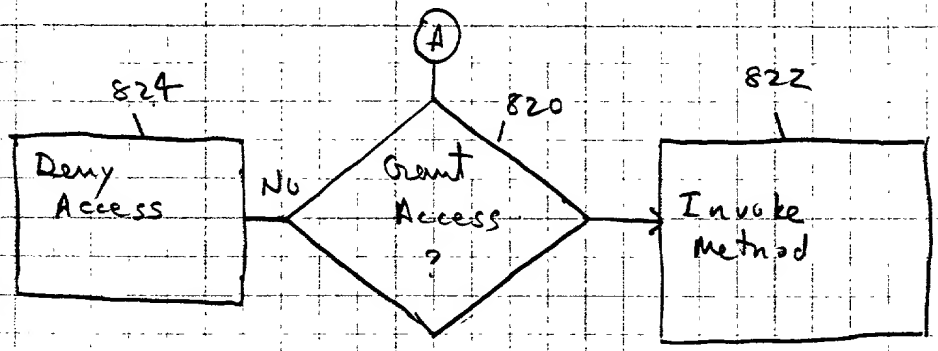

800
802
Receive Message
803
Create Object Associated With User
804
Read Configuration File
806
Create Security Wrapper Object
808
Store Pointer To Equipment Model Object
810
Store Access Control Data
812
Current Equipment Model Object = Object Accessed ?
yes
814
Continue To Next Object In Equipment Model Hierarchy
816
Return Pointer To Security Wrapper Object
818
Pass Pointer To Security Wrapper Object Method
A

FIG. 8, cont.



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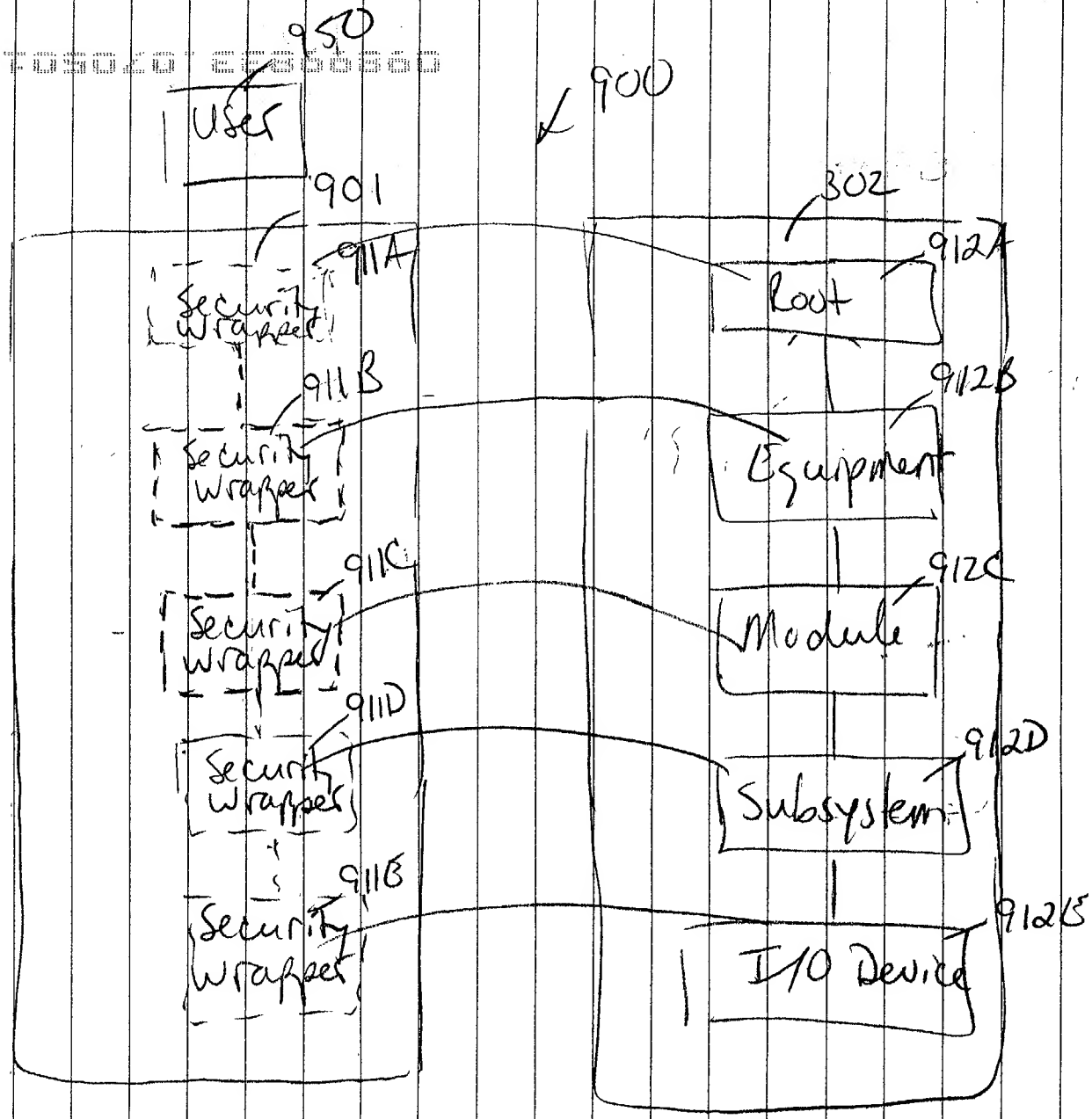

Figure 9